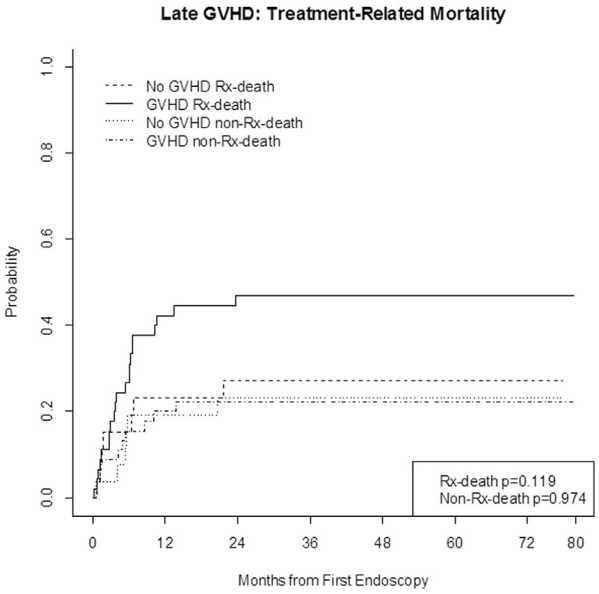

Figure 1.

those without (p=0.131) due to a higher incidence of treatment-related mortality (Figure 1, p=0.119).

Conclusion: Late GI complications are common after HSCT, with 18% of patients requiring endoscopy after Day 100. Few clinical characteristics distinguish GVHD from other etiologies and endoscopy is essential to establishing the diagnosis. Findings of crypt destruction may predict severe GVHD and need for TPN.

455

Outcomes of Bone Marrow or Cord Blood Matched Related Transplantation for Children with Sickle Cell Disease: Experience of a Canadian Center

Pierre Teira [1], Henrique Bittencourt [2], Yves Pastore [3], Nancy Robitaille [3], Michel Duval [4]. *[1] Hematology Oncology, Charles-Bruneau Oncology Center, CHU Sainte Justine, Montreal, QC, Canada; [2] Hematology Oncology, Charles-Bruneau Oncology Center, CHU Sainte Justine, Montreal, QC, Canada; [3] Hematology Oncology, Charles Bruneau Oncology Center, CHU Sainte Justine, Montreal, QC, Canada; [4] Centre de Cancerologie Charles-Bruneau, CHU Sainte-Justine, Montreal, QC, Canada*

Introduction: Hematopoietic stem cell transplantation (HSCT) still remains the only curative treatment for patients suffering from severe forms of sickle cell disease (SCD). The aim of this study was to review the indications and outcomes of SCD children transplanted with a matched sibling donor at a medium sized pediatric institution in Canada.

Methods: From 2003 to 2014, 17 children received a HSCT at our institution. Data were retrospectively extracted from medical charts.

Results: All children had severe forms of SCD including stroke (3/17), silent strokes (7/17), cerebral artery stenosis (9/17), acute chest syndrome (10/17), splenic sequestration (5/17) and recurrent vaso-occlusive crisis requiring up to 41 hospital admissions for one patient. Neurocognitive impairment was documented for 7 out of 11 children tested. Before HSCT, 10/17 children had been treated by programmed blood transfusions and 12/17 had received hydroxyurea. Children transplanted after 2010 tended to be younger and to have less brain damage. The median age at HSCT was 10y (2 to 15y). The myeloablative conditioning regimen was based on Busulfan, Cyclophosphamide and rabbit antithymoglobulin. The source of stem cells was a bone marrow for 11 patients and a cord blood for 6.

The median follow-up was 56 months (128 to 4m). All patients engrafted. Stable mixed chimerism (less than 95% of donor cells) was common (13/17). No patient experienced new onset of SCD complications. Previous organ damages did not progress after HSCT. No grade 2-4 acute graft versus host disease (GVHD) was observed. Extensive chronic GVHD was noted for 2 out of 16 patients and evolved favorably on treatment. At 12 months after HSCT, 10 out of 11 children were free from immunosuppressive drugs. Opportunistic infections were common such as CMV (12/17) or EBV (13/13), and evolved favorably with or without treatment. One death not related to HSCT occurred 42 months after HSCT. Among 5 evaluable women, 2 have primary amenorrhea, 2 have some signs of ovarian insufficiency and the youngest one (5 years old at HSCT) has a normal ovarian function.

Conclusion: HSCT with a matched sibling donor is safe and effective to cure children suffering from SCD, whatever the graft source is a bone marrow or a cord blood. The outcomes at our medium-sized Canadian institution are identical to the best results from larger institutions. A younger age at HSCT may enhance the functional prognosis of severe SCD and may decrease the risk of long term gonadal toxicity related to HSCT.

456

Experience with Administration of Ruxolitinib after Allogeneic Stem Cell Transplantation (alloSCT) in Patients with Myelofibrosis

Eswar Tipirneni [1], Saranya Kodali [2], Muthalagu Ramanathan [1], Rajneesh Nath [1], Jan Cerny [1]. *[1] Department of Medicine; Division of Hematology/Oncology, University of Massachusetts, Worcester, MA; [2] Department of Medicine, University of Massachusetts, Worcester, MA*

Background: Ruxolitinib (Rux) is a potent, oral JAK inhibitor that is approved for treatment of intermediate- or high-risk myelofibrosis (MF). Several groups reported on Rux use before alloSCT with primary goals of splenomegaly and constitutional symptom reduction. There are no data on Rux posttransplant.

Methods: We retrospectively analyzed the outcomes of patients diagnosed with MF at University of Massachusetts Medical Center who received Rux before and post alloSCT (between 6/2013 and 8/2014).

Results: Four patients (2 females) were identified; median age was 76 years (49-83) at diagnosis. One patient had primary MF, 3 had secondary MF. One had secondary AML with post PV-MF, 1 had secondary MDS with MF and one had chronic myelomonocytic leukemia with MF. All had constitutional symptoms at diagnosis. Three patients had splenomegaly, 1 had surgical splenectomy before alloSCT. Three patients had received Rux before alloSCT. The median time from Rux to alloSCT was 4 months (0.4-4.9). Two patients received RIC regimen (Fludarabine/Bu2/ATG) and 2 received Thiotepa/Fludarabine/Melphalan with posttransplant cyclosphosphamide. Neutrophils engrafted with median 16 days (12-23). All patients were transfusion independent at day 30 (D30) with >97% donor chimerism in BM. Following the alloSCT Rux was started with median 2.2 months (0.4-8.8) from alloSCT. CMV viremia was detected in one patient before day 100 and one had suspected VZV reactivation at 12 months, in both cases Rux was continued. No EBV reactivation or fungal infection was seen. Three pts had a brief episode of aGVHD (grade I, I and III) of the skin that responded to steroids and immunosuppression taper.

All the patients are alive in remission at the present time with median post SCT survival of 9.4 months (2.1-18.5).
Conclusion: Posttransplant Rux appears to be safe and feasible. Further investigation is warranted to elucidate whether improved outcomes are due to a direct effect on the primary marrow disorder, alleviation of the constitutional symptoms or GvHD.

457

Delayed and Sudden Lymphocyte Recovery Is the Predictive Sign of Primary Graft Failure Following CBT, Single Institute Analysis of 105 CBT

Toshimitsu Ueki, Hiroko Kaiume, Takehiko Kirihara, Wataru Takeda, Taro Kurihara Jr., Keijiro Sato, Ikuo Shimizu, Yuki Hiroshima, Masahiko Sumi, Mayumi Ueno, Naoaki Ichikawa, Hikaru Kobayashi. *Hematology, Nagano Red Cross Hospital, Nagano, Japan*

Background: Primary graft failure (pGF) after cord blood transplantation (CBT) still occurs in roughly 10% of cases. Although associated with a poor prognosis, cases diagnosed early have an increased possibility of rescue with re-transplantation. We considered an early stage diagnostic method by elucidating mechanisms underlying post-CBT pGF.
Patients and Method: We analyzed 105 cases of single-unit CBT at our institution. For pGF cases, we analyzed WBC dynamics (neutrophils, lymphocytes), chimerism, and fever, and compared these parameters with delayed (>day 28) or normal (≤day 28) engraftment cases.
Results: Of the evaluable 102 cases, 59 were normal engraftment cases, 33 were delayed engraftment cases, and 10 were pGF cases. Of the 10 pGF cases, 7 showed essentially no blood cell count recovery by day 14, and sudden lymphocyte recovery at a median of day 18 (range, 15-24) followed by graft rejection. Of the 4 assessed for chimerism at the time of lymphocyte increase, all showed recipient-derived cells. 3 of the 10 pGF cases never achieved WBC≥100/μL by day 28. For engraftment cases, lymphocyte number peaked at day 12, and almost cases assessed for chimerism showed donor-derived cells. Only 1 of the 67 cases which showed WBC >100/μL on day 12 indicated pGF, whereas pGF was observed in 9 of the 33 cases in which WBC was <100/μL ($p<0.001$). 72 cases had febrile episodes which were associated with pre-engraftment immune reaction. The proportion of febrile (≥38°C) cases peaked at day 8 for normal engraftment cases, day 11 for delayed engraftment cases, and day 12.5 for pGF cases.
Conclusions: pGF likelihood should be considered for cases of delayed timing of non-infectious fever, cases for which WBC recovery is not seen at around day 12, and cases of sudden lymphocyte recovery at around day 18.

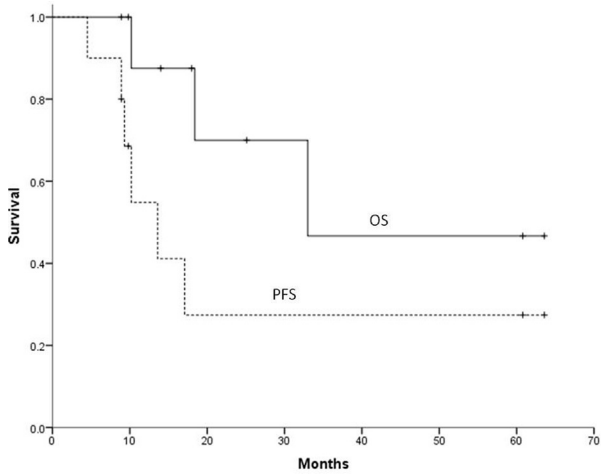

Figure.

458

Anti CD20 Radioimmunotherapy and mTOR Inhibition in Reduced Intensity Conditioning Hematopoietic Stem Cell Transplantation for Relapsed/Refractory B Cell Lymphomas

Elvira Umyarova [1], Saurabh Chhabra [2], Alice Mims [2], Robert Stuart [3], Luciano J. Costa [4]. [1] *Hematology and Oncology, MUSC, Charleston, SC;* [2] *Hematology and Oncology, MUSC, Charleston, SC;* [3] *Medicine, Medical University of South Carolina, Charleston, SC;* [4] *Medical University of South Carolina, Charleston, SC*

A subset of patients with advanced or relapsed B-cell lymphomas can be cured with allogeneic hematopoietic cell transplantation (allo-HCT), but success is hampered by the risk of recurrence and GVHD. Here we report the results of a phase 2, single center trial combining anti-CD20 radioimmunotherapy (RIT) with I-131 tositumomab and mTOR inhibition with sirolimus for prevention of serious GVHD and reduction in risk of relapse. Subjects (n=10) received I-131 tositumomab 75cGi therapeutic dose on day -12, fludarabine 25 mg/m^2 IV on days -6 to -2 and melphalan 70 mg/m^2 IV on days -3 and -2 followed by peripheral blood grafts from 7/8 or 8/8 HLA matched related or unrelated donors. GVHD prophylaxis consisted in sirolimus 12 mg PO loading dose on day -14 in order to overlap with the conditioning regimen, then 4 mg PO daily with target blood level of 3-12 ng/ml, and

Table.

Age	Sex	Disease	Prior Auto	N prior therapies	Status at transplant	Donor	CD34 dose 1 (x10e6/kg)	CD3 dose (x10e8/kg)	aGVHD max grade	cGVHD	Time of relapse (months)	Follow-up (months)	Outcome
41	M	FL	Yes	4	CR	MRD	3.18	3.38	3	Yes	8.9	18.4	Death from disease
87	M	DLBCL	Yes	3	PO	MUD	1.9	0.3	0	Yes		63.6	Alive
64	M	DLBCL	No	2	PR	MUD	1.84	2.97	0	Yes		60.8	Alive
54	F	MCL	No	2	PR	MUD	10.19	3.57	0	Yes		10.2	Death from PE
52	M	DLBCL	Yes	4	PR	MRD	2.94	4.22	0	Yes	9.3	33.0	Death from disease
69	M	FL	Yes	5	PR	MUD	10.39	1.61	0	Yes	13.6	25.1	Alive
39	M	DLBCL	No	2	PR	MUD	6.87	2.24	0	No	17.1	18.0	Alive after relapse
35	F	DLBCL	No	2	PR	MRD	5.87	3.01	0	No	4.5	14.0	Alive after relapse
61	M	DLBCL	No	2	CR	MMRD	7.9	3.01	0	Yes		9.8	Alive
46	F	DLBCL	No	1	CR	MMUD	4.03	112	0	Yes		8.9	Alive